

Health Status Disparities in the United States

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Woodrow Wilson International Center for Scholars

Edited Transcript-

Dr. Paula Braveman: The Unsolved Mystery of Racial Disparities in Infant Health: Do We Know Enough to Act?

There are still more questions than answers concerning racial disparities in birth outcomes. The whole area has been inadequately studied and, in the face of limited data, there is a widespread assumption that the basis for racial differences must be bad behaviors and genes, or some combination of those two. Those are convenient hypotheses to hold if you want to be taken off the hook from having to implement a policy response. However, the current knowledge of the likely causes of black-white disparities in birth outcomes, the involvement of social factors, and in particular, the cumulative lifetime effects of psychological stress need to be addressed.

“Controlling” for SES

There are often studies that conclude a disparity between races must have a genetic cause because the disparity was still present after the researchers “controlled for differences in SES.” Studies that claim to have controlled for SES rarely measure more than education level or current income. Even at a given educational or income level, there are enormous black-white differences in wealth, such as accumulated assets; the quality and the rewards of education; neighborhood socioeconomic conditions; and childhood socioeconomic conditions. To claim that a given racial disparity is independent of SES—a claim made even in some of the best journals—one would have to measure all of the relevant socioeconomic factors likely to be important in determining health outcomes. This would be an enormous undertaking, requiring the inclusion of measures of income, educational quality, wealth, occupation, occupational control and prestige, neighborhood characteristics, and one's perception of one's status and position. For complete accuracy, all of these factors would need to be measured throughout life, or at least at certain critical developmental periods. Therefore, it is highly unlikely that researchers could adequately control for SES. Be very skeptical of studies concluding that an observed racial disparity is genetic solely because the disparity remained after controlling for SES.

Causes and Repercussions of Persistent Disparities

Babies born to African American mothers are approximately twice as likely to have low birth weight (LBW), to be born prematurely, and to die in infancy than babies born to European American mothers. As shown in Figure 1, LBW disparities have persisted over time—a trend that also appears in the data for pre-term birth (PTB) and infant mortality.



Having LBW and/or being born pre-term are reliable predictors of whether an infant will live to complete his or her first birthday. Furthermore, among those babies that survive, LBW and PTB are the best predictors of very serious disabilities—cognitive, emotional, behavioral, and/or physical—and a large body of evidence ties LBW and/or PTB to higher rates of chronic disease in adulthood, specifically diabetes and cardiovascular disease.

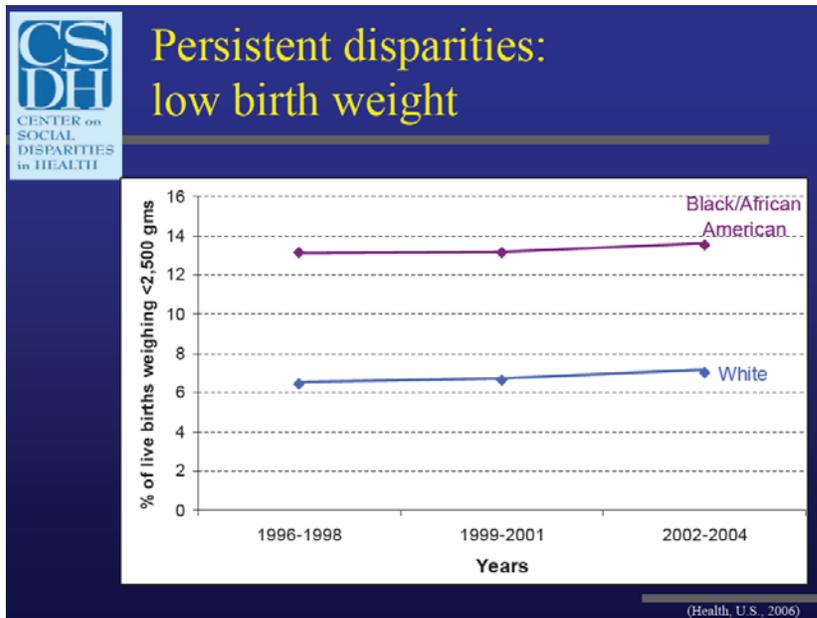


Figure 1

The lasting repercussions of PTB and LBW place a tremendous burden on families and society and, unfortunately, we do not know enough about their known and suspected causes (Figure 2). In 2005, the Institute of Medicine estimated the costs of PTB alone to be over \$26 billion, including medical care, social services, and special education for disabled children. Additionally, both familial and societal productivity is lost when babies die or go on to live with very serious disabilities.

Known:	Suspected:
<ul style="list-style-type: none"> • Tobacco • Excessive alcohol • Drugs • Nutrition • Short maternal stature • Chronic disease 	<ul style="list-style-type: none"> • Infections • Environmental toxins • Physically demanding work • Genes/gene-environment interactions • Stress (psychological)

Figure 2 – Known and Suspected Causes on Low birth Weight and Pre-Term Birth

Is it possible one of the suspected causes of PTB and LBW could explain the disparities in black-white birth outcomes—babies that are born too small (less than 2500 grams) or too early (less than 37 weeks of gestation)? For some time, it has been well documented

that there are higher rates of certain infections among African American women, but treatment of these infections has not been shown to consistently improve birth outcomes, making a causal hypothesis very problematic. Environmental toxins are a plausible explanation, particularly given likely differences in exposures, but there has been very little research into the causal relationship between environmental toxins and adverse birth outcomes. The same applies to the potential effects of physically demanding work. Looking at known causes, African American women on the whole smoke less than their white counterparts. In fact, studies show the disparities in black-white birth outcomes persist even after controlling for known causes.

It is one thing to look at the direct causes of LBW and PTB, and another to address the causes of the disparities that may influence adverse birth outcomes, as they are not necessarily the same things. These disparities are not explained by the known or suspected causes of LBW and PTB.

The Role of Cumulative Psychological Stress

Psychological stress, experienced cumulatively, over the course of a lifetime is a factor which a growing number of experts believe could explain a large part of the black-white disparities in birth outcomes. We still have more questions than answers, but we can learn something from looking at the patterns in the available data. For example, Figure 3 displays the results of a stratified random sample of women selected from birth certificates in California. As income increases for both black and white groups, the LBW rates decrease, yet the relative disparity between blacks and whites increases.

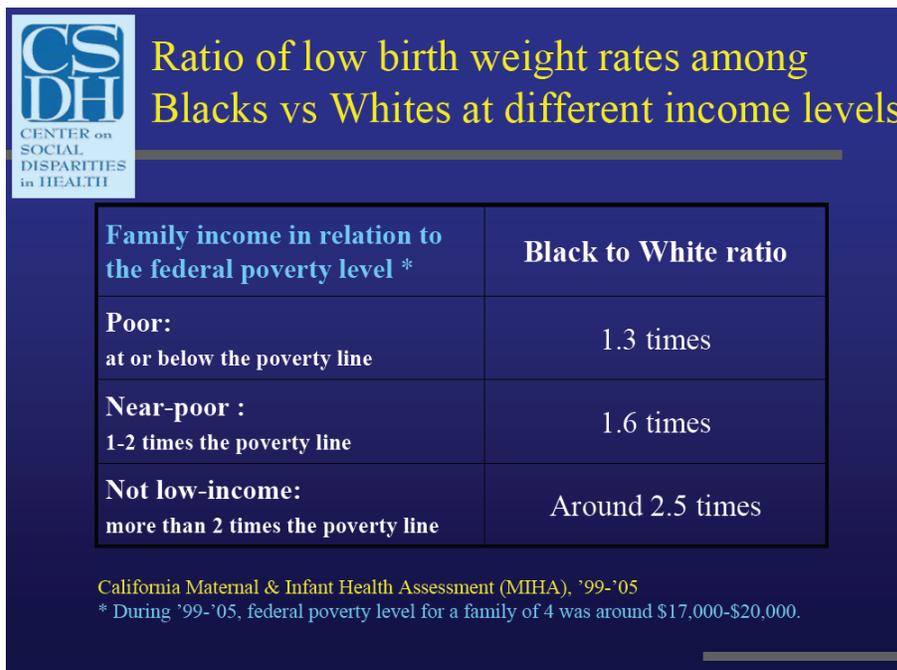


Figure 3

It is difficult to explain this disparity pattern with a genetic hypothesis. Further, it is unlikely that there is a particular genetic contributor to birth outcome disparities, as LBW and PTB are believed to have very different etiologies. We know that US-born African Americans have adverse birth outcomes, but the birth outcomes of black African and Afro-Caribbean immigrants are relatively good by comparison. If genes were the culprit, immigrants would be expected to do worse, because at least in theory, they have a heavier dose of the “adverse outcome” genes.

With a genetic explanation unlikely, does the psychological stress hypothesis fit the pattern of disparities in birth outcomes between black and white mothers? What if there are different effects of different types of stress? What about the duration of the stress, and its timing at critical periods in life, for example, during childhood adolescence? And what about differences in the resources that buffer the effects of stress?

In the field of stress research, it has been well-documented that optimism and social support can buffer the adverse health effects of stress. Could a lack of this buffer and increased levels of stress influence birth weight and/or prematurity? It is biologically plausible that stress could directly influence birth outcomes, considering high and persistent levels of the stress hormones—epinephrine, norepinephrine, and cortisol—have been documented to trigger a whole range of adverse physiological effects. The sympathetic nervous system, the neuro-endocrine pathways, and the immune system have been shown to be adversely affected by stress, and these same systems and pathways are involved in the cascade leading to premature labor, and in some cases, poor fetal growth.

So who has more stress? In California, my colleagues and I looked at several major psychosocial stressors or hardships experienced during pregnancy. (Figure 4) Unfortunately, we didn't have a chance to ask about hardships before pregnancy, which is a limitation. But, what we found is a much higher percentage of black women experience multiple stressors during pregnancy than white women, regardless of SES.

% of Women Experiencing a Particular Stressor During Pregnancy		
Stressor	Black	White
Separated or Divorced	17%	4%
Partner Lost Job	15%	11%
Food Insecurity	21%	11%

Figure 4

Additionally, stress experts believe it is not necessarily any particular stressor, but the total number of hardships that one experiences, that may be driving health damages (Figure 5).

The level of cumulative stress, over the course of a lifetime is much greater among African Americans than among European Americans. These stressors go far beyond economic adversity, poverty, and low income, and include social and relationship stressors, which affect black women preferentially to white women despite SES.

Additionally, higher income black women, or black women of higher education, are less likely than whites to have grown up in well-off households. Yet the effects on adult health of an individual's socioeconomic circumstances during childhood are rarely measured.

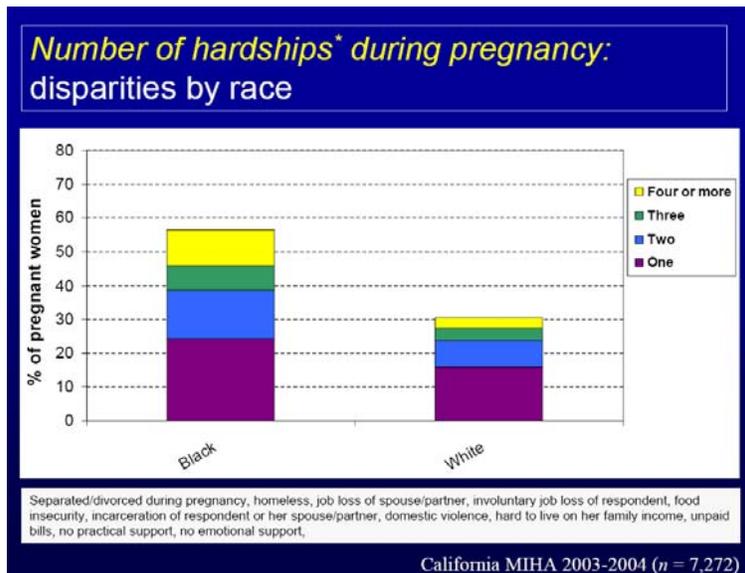


Figure 5

Long-term deregulation of the neuro-endocrine system, childhood stress, and/or chronic stress may lead to adverse birth outcomes, even if the pregnancy itself is relatively stress-free. For example, someone subjected to chronic stress and/or high levels of stress in childhood could have their neuro-endocrine regulatory system set so that they either hyper-secrete cortisol in response to a relatively low level of stress, or lose their stress reactivity, which then sets in motion other adverse physiological phenomena.

Neighborhood Stressors

Environment can often be a major stressor, and therefore the characteristics of an individual's neighborhood can affect health outcomes. There are often dramatic differences in the kinds of neighborhoods that blacks and whites live in, even when they are considered to have the same SES. At a certain individual or household income level, a black person is much more likely than his or her white counterpart to be living under adverse socioeconomic circumstances in their respective neighborhood.

There are many things that could make a neighborhood unhealthy, including risks of violence and physical danger; lack of a safe places to exercise; air pollution; lead; substandard housing with dust and mold; and lack of access to healthy food. Additionally, there may be a limited number of healthy role models, which could be particularly important for teenagers growing up in an environment in which the norm is substance abuse.

Racism as a Stressor

What about racial discrimination as a source of chronic stress over the life course? A number of studies have linked experiences of racism to negative health outcomes, including adverse birth outcomes.

The contribution of racism to the black-white disparity in birth outcomes is not definitive and in order to further study the hypothesis, my colleagues and I are currently developing measures that we would feel confident using in birth outcome research. We have collected qualitative data from black women of different socioeconomic levels, describing their experiences with racism. These results confirm that black women are still, in 2007, experiencing incidents of racial discrimination. The most striking aspect of the results, however, is how many of the reported experiences related to racism would not have been captured if we had only asked about the incidence of overt racism. There is a pervasive sense of anxiety and vigilance among the survey respondents, and they are constantly asking themselves the question: “Am I about to be insulted or treated unfairly in some way?”

For women of reproductive age, the fear they feel for themselves is at least as strong as the fear they have for their children. From the way the women have spoken, there is a lasting impact of childhood experiences of racism, and thinking back on their own experiences, the respondents acknowledge stress based on the vicarious experiences of their children. So, we want to develop measures that will validate those experiences.

Action for the Future

What are the current policy implications of this evidence? The role of stress in birth outcome disparities is very plausible, yet inconclusive. Even in the face of the big question marks it is still warranted to recommend the undertaking of more intensive action to reduce the known adverse risk factors before and during pregnancy, including the use of tobacco, alcohol and drugs, and the presence of chronic disease. Even though these factors do not explain the disparity, concerted action to preferentially target African American women and African American communities in order to diminish these, would certainly help. Also, we have to remember that those are the proximate causes, measured closest to the outcome. What about the disparities behind the causes? We know that poverty and low education are the strongest links to alcohol, tobacco, drugs, chronic disease, et cetera.

In addition to pressing harder on the known risk factors, we need to collect more biomedical research into the potential causes of negative birth outcomes, including the possible effects of environmental toxins, infections, gene-environment interactions, and working conditions. We cannot ignore the patterns in black-white disparities in infant health, which suggest that social factors—potentially stress factors—experienced across the life course play a very powerful role.

While many of us believe that psychological stress is a likely suspect in black/white birth disparities, we have limited conclusive research in affluent countries. There is, however,

much more data from developing countries to emphasize the impact on birth outcomes of economic adversity during pregnancy. There is also a much greater body of evidence on the effects of early childhood economic adversity, and how that shapes educational opportunities, which shape employment opportunities, which in turn affect health across the whole life cycle. It makes sense—even without conclusive data—that if you are trying to reduce early childhood economic adversity, pregnant women are a good place to start.

There are very compelling economic and ethical reasons to act. The case has been made for more intensive action, focusing on poverty, improving education, and closing the gap on social disadvantage. Such studies cannot be conducted in a test tube, or on a small scale, yet scientific rigor must not be sacrificed. We need population-wide initiatives in order to address the multifactoral aspects of birth outcome disparities, to reduce harmful exposures, and promote protective factors in households and neighborhoods. This will require bold policies, on a scale beyond the capabilities of individual research agencies.

When do we know enough to recommend policy change? The answer is that where the costs of the status quo are very high—where we have just tremendously unequal chances at birth, based on skin color, as they are in this case - it is imperative to act on the best available knowledge.